



## WMC Approves Global Greenhouse Gas Watch

**For Prelims:** [WMO](#), [Climate Change](#), [Green House Gas](#), [UNFCCC](#).

**For Mains:** [Need for Global Greenhouse Gas Watch](#).

### Why in News?

Recently, the 19<sup>th</sup> [World Meteorological Congress \(WMC\)](#) has approved the [Global Greenhouse Gas \(GHG\) Watch \(G3W\)](#), a **GHG** monitoring initiative, to reduce the heat-trapping gases and combat [Climate Change](#).

- The [World Meteorological Organisation \(WMO\)](#) in the Collaboration with WHO also framed **2023-2033 Implementation Plan for Advancing Climate, Environment and Health Science and Services** to manage the impact of Climate Change.

**Note:** The Nineteenth World Meteorological Congress (Cg-19) is currently taking place from 22 May to 2 June 2023 at the International Conference Centre of Geneva (CICG). It is the supreme body of the World Meteorological Organization (WMO).

### What is the World Meteorological Organization (WMO)?

- The WMO is an intergovernmental **organization with a membership of 192 Member States and Territories**.
  - India is a member of WMO.
- It originated from the **International Meteorological Organization (IMO)**, which was established after the **1873 Vienna International Meteorological Congress**.
- Established by the ratification of the **WMO Convention on 23<sup>rd</sup> March 1950**, WMO became the **specialized agency of the United Nations** for meteorology (weather and climate), operational hydrology and related geophysical sciences.
  - WMO is headquartered in Geneva, Switzerland.

### What is the Greenhouse Gas Watch (G3W)?

- **About:**
  - It will establish internationally coordinated top-down monitoring of greenhouse gas fluxes to support the provision of actionable information to the [UNFCCC Parties](#) and other stakeholders.
  - The GHG watch will fill critical information gaps and provide an **integrated and operational framework**. The framework will bring all space-based and surface-based observing systems, as well as modeling and data assimilation capabilities, under one roof.

#### ▪ **Implementation:**

- The monitoring infrastructure will build on and expand WMO's long-standing activities in GHG monitoring, implemented as part of the **Global Atmosphere Watch (GAW)** and via its **Integrated Global GHG Information System (IG3IS)**.
  - The GAW of WMO focuses on building a single coordinated global understanding of atmospheric composition, its change, and helps to improve the understanding of **interactions between the atmosphere, the oceans and the biosphere**.
  - IG3IS aims to coordinate an integrated global GHG information system, **linking inventory and flux model based information with atmospheric observations** and modelling, to provide the best possible estimates of greenhouse gas emissions at the national and urban scales.

#### ▪ **Components:**

- Surface-based and satellite-based observations
- Prior estimates of the GHG emissions based on activity data and process-based models
- Global high-resolution Earth System models representing GHG cycles
- Data assimilation systems associated with models to generate products of higher accuracy

#### ▪ **Significance:**

- At present, **there is no comprehensive, timely international exchange** of surface and space based GHG observations or modelling products.
- GHG monitoring infrastructure will help improve understanding of the carbon cycle. Understanding the full carbon cycle is **vitaly important for the planning of mitigation activities**.
- Globally consistent, gridded information on GHG and their fluxes with appropriate time resolution **will help in the improved evaluation of sources and sinks** of GHG and indicate their association with the biosphere, the ocean and the permafrost areas.

## What are Greenhouse Gases?

#### ▪ **About:**

- A greenhouse gas (GHG) is a gas that absorbs and emits radiant energy at thermal infrared wavelengths, causing the greenhouse effect.
- The primary GHGs in Earth's atmosphere are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and ozone (O<sub>3</sub>).

#### ▪ **Initiatives to Curb GHGs:**

- **Global:**
  - [Paris Agreement](#)
  - [UN SDGs](#)
- **India:**
  - [National Action Plan to Combat Climate Change \(NAPCC\)](#)
  - [India Cooling Action Plan](#)

## What is the 2023-2033 Implementation Plan?

#### ▪ **Objective:**

- The plan aims to achieve “better health and well-being for people facing existing and emerging extreme weather events, climate change and environmental risks **through the effective integration of climate, environment and health science** and services across the world”.
- It seeks to promote **a coordinated approach to manage the impact of climate, weather, air pollution, ultraviolet radiation, extreme events and other environmental factors on health**.

#### ▪ **Need:**

- By 2030-2050, climate change is **projected to cause approximately 250,000 extra deaths** annually due to **malnutrition, malaria, diarrhoea, and heat stress**.
- If current emission levels persist, up to **8.4 billion people could be at risk from malaria and dengue**, two major vector-borne diseases, by the end of the century.

- Concerns arise regarding extreme heat and the importance of strengthening understanding, early warning systems, and risk management for climate-related risks like heat waves, wildfires, and air quality issues.
  - In 2022, India experienced its hottest March, leading to early heat waves across various regions.
  - Extreme heat will expose **600 million Indians to dangerous temperatures by 2030.**

[Source: DTE](#)

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